Book Review

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Mercury and autism: a damaging delusion

A new book by a New York journalist falls for some contagious myths about the dangers of vaccines.

by Dr Michael Fitzpatrick

Evidence of Harm: Mercury in Vaccines and the Autism Epidemic: A Medical Controversy, by David Kirby, St Martin's Press, New York, April 2005.

As the parent of an autistic child, and as a doctor distrustful of government and corporate involvement in healthcare, I might be expected to respond positively to this book. If there was convincing evidence that vaccines containing the mercury-based preservative thimerosal cause autism, perhaps I would join those currently applauding David Kirby's book on his coast-to-coast US promotional tour. But since there is no such evidence, I fear that his misguided endorsement of the anti-mercury cause can only compound the damage that this campaign has already done, both to families affected by autism and, by undermining public confidence in the childhood immunisation programme, to the welfare of children in general.

Kirby, a freelance journalist in New York, presents this 'medical controversy' as a confrontation between two camps. On the one side are heroic, suffering, struggling parents and their courageous supporters; on the other are cold, scheming, faceless bureaucrats of the medical establishment, big pharma and big government. Kirby's character sketches leave readers in no doubt about his allegiances.

Leading 'Mercury Mom' Lyn Redwood is introduced as 'an attractive woman, with cocoa-coloured hair and soft, almost cat-like brown eyes'. Fellow campaigner Sallie Bernard cuts 'a handsome figure' in 'a white suit with black piping and matching scarf, her light blond hair clipped short'. Liz Birt, a Chicago attorney who speaks several languages, appears in a 'dark red jacket' with 'an unflinching face'. Laura Bono is 'a petite Southern charmer'; her husband Scott is 'a gentle giant of a man with dark brown eyes, brown hair messed up on his head', 'bookish glasses' and a 'goofy grin'. These talented, attractive, affluent campaigners live in stylish suburban homes, which Kirby describes in detail, in true celebrity magazine style.

By contrast, Dr Marie McCormick, of the Harvard School of Public Health, who chaired last year's Institute of Medicine (IoM) investigation into thimerosal, is introduced as 'a middle-aged woman who came across - to the parents at least - as stern'. Kirby reports that they nicknamed her 'Church Lady' - after the priggish Dana Carvey character on Saturday Night Live. She is further accused of being 'less than honest' at a press conference, of being 'curt and hostile' and - in a supreme irony - of having the 'zeal of a true believer'. Immunisation specialist Elizabeth Miller, who presented compelling evidence from the UK against the mercury theory at the IoM inquiry, has 'an educated British accent and could charitably be described as aloof'. All of this could be dismissed as merely trashy journalism were it not for the fact that Kirby's pantomime heroes and villains are engaged in a real human drama, one in which the stakes, for all concerned, are high (1).

'Curiously', writes Kirby, 'the first case of autism was not recorded until the early 1940s, a few years after thimerosal was introduced in vaccines'. But why is this curious? He might just as well state that the identification of autism followed Pearl Harbor or the success of Gone with the Wind. Indeed it is clear that this coincidence attracted no curiosity at all for several decades - until it was noted in an anti-vaccine tract in 1985 (2). Though in recent years some parents of autistic children have come to blame mercury-containing vaccines for their children's condition, their belief is based on a combination of coincidence and conjecture.

It is true that mercury is potentially toxic to the developing infant brain and that, as babies were given more vaccines, the total dose of mercury received increased (though it remained at trace level, and it has now fallen as immunisation authorities have, in deference to popular anxieties, shifted to non-mercury vaccines). Yet, exhaustive studies, carried out in the USA, the UK and elsewhere, and surveyed by the US Institute of Medicine in an authoritative report last year, have failed to reveal any link between exposure to thimerosal and autism (3). The so-called 'epidemic of autism', which some parents blame on vaccines, is better explained by the increased recognition of the condition among both parents and professionals and by the expansion of diagnostic categories. Though campaigners claim that the symptoms of mercury toxicity are similar to those of autism, on closer inspection, they are quite distinct. Mercury poisoning typically causes an unsteady gait and slurred speech, visual disturbances and numbness in fingers and toes. None of these features is characteristic of autism.

The IoM received extensive submissions from anti-mercury campaigners and, at their request, surveyed a number of laboratory studies claiming to demonstrate mercury-induced damage in autistic children, or 'autistic-like' behaviour in mice. The committee's experts found these studies scientifically incoherent and methodologically flawed. 'In the absence of experimental or human evidence that vaccination affects metabolic, developmental, immune or other physiological or molecular mechanisms that are causally related to the development of autism', the committee concluded, 'the hypotheses generated to date are theoretical only'. Noting that while the risks of vaccination were speculative, the benefits were proven, the IoM vigorously upheld the current mmunisation programme.

It appears reasonable that a toxic heavy metal might possibly cause brain damage leading to autism, at least in susceptible individuals. Yet on closer examination this theory is revealed as misleading and specious, with a capacity to deceive those whom it influences. Captivated by the Mercury Moms, Kirby appears to have been seduced by the plausibility of the mercury-autism theory, which he proceeds to promote with a zeal that runs far ahead of the scientific evidence. His account reveals a number of problems.

The first is that of expertise. To explore the intricacies of the mercury-autism controversy requires some familiarity with a range of medical and scientific disciplines, including immunisation and public health, epidemiology, autism and toxicology. With a degree in liberal arts and little experience in science reporting, Kirby is ill equipped for this task. Hence he resorts simply to presenting - in great detail - the case made by anti-mercury parents and by a handful of researchers aligned with the campaign. (In fairness, he often also presents the opposing case, but the reader is left in no doubt where his sympathies lie - and the result is that many of his 400-plus pages are difficult for the lay reader to interpret.)

But parents of autistic children are in no stronger a position than Kirby to acquire the wide range of scientific expertise required. Indeed, given the burden of caring for their children, it is even more difficult for them. At best, parents can acquire a 'narrow-band competence' that may allow them to select information that supports an established conviction, and - as Kirby demonstrates - this may be effective for producing campaigning propaganda. But a narrow and selective approach can lead to the sort of dogmatic outlook that he also reveals among parent activists - an outlook that is inimical to scientific inquiry.

Campaigning parents are likely to respond sympathetically to offers of support from researchers whose work appears to provide evidence for their campaign's claims - even if this work is not recognised by scientific peers who are in a stronger position to evaluate it. When campaigning parents, who are inevitably lacking in scientific expertise, become involved in commissioning research, the results are unlikely to have scientific value. Kirby's account reveals the reliance of the anti-mercury campaign on some research that appears to be of poor quality and some that is simply junk science (4). It is striking that research carried out with the support of parent campaigners invariably provides further confirmation of the campaigners' claims. Some of these researchers make extravagant claims for the explanatory power of their theories - and for the therapeutic value of interventions based on them.

As Kirby reports, parents involved in the anti-mercury campaign often also pursue a range of esoteric investigations and treatments for their children, including chelation therapy to eliminate mercury, injections of vitamin B12 and various dietary exclusions and supplements. These costly treatments are often provided by doctors involved in the anti-mercury campaign. Yet, though Kirby relates a number of stories of children improving dramatically on these treatments, neither the efficacy nor the safety of these techniques has been confirmed. When Kirby reports that one family involved in the campaign has spent more than $500,000 on such treatments, he appears oblivious to the dangers to vulnerable parents of quacks and charlatans peddling miracle cures.

From the perspective of the Mercury Moms, official health agencies such as the Centers for Disease Control and Prevention (CDC), and the Food and Drug Administration, are involved in a conspiracy to conceal evidence of the harm caused by thimerosal. Yet it is difficult to emerge from Kirby's exhaustive account without some sympathy for these bodies and their senior staff who have clearly gone to great lengths to listen and respond to parental concerns. If the authorities had failed to investigate campaigners' claims they would have been accused of irresponsibility; but when campaigners discovered that the authorities had been investigating allegations about mercury, this only served to confirm allegations of a cover-up. If the authorities had continued to use thimerosal in vaccines, campaigners would have continued scaremongering; when they withdrew thimerosal, this was adduced as proof that mercury was harmful.

Kirby reproduces campaigners' allegations against former CDC staffer Dr Thomas Verstraeten, based on minutes of an internal discussion of preliminary results of his study of thimerosal, held at Simpsonwood in Georgia in June 2000. Yet Verstraeten's response (also reproduced by Kirby) to allegations that the data in his final report had been doctored to conceal an association between thimerosal and autism seems entirely convincing. It appears that campaigners were

aggrieved that Verstraeten moved on to work for a drug company that makes vaccines. But given the reliance of vaccine research on vaccine manufacture, it would be difficult to find anybody with experience in clinical trials or other research into vaccines who did not have some relationship with the pharmaceutical industry.

Kirby follows his Mercury Moms in condemning pharmaceutical companies for poisoning children with mercury, and for conspiring with federal authorities and regulatory agencies to conceal their malfeasance to avoid paying compensation to their alleged victims. Though the increasingly unpopular drug companies provide a convenient focus for parental anger, there is little evidence to support the wild allegations made by campaigners and no reason why companies should pay damages in relation to unsubstantiated claims. Indeed, the real problem facing the government is supply shortages resulting from the reluctance of pharmaceutical companies to continue producing vaccines. For some time an area of low investment and low profitability, vaccine production is increasingly threatened by the climate of risk aversion and litigiousness - as the anti-mercury campaign aptly illustrates.

Kirby offers a poignant account of how 'out of a hodgepodge of desperate and sad people' there emerged 'a community of brave souls united in grief and hope' in the anti-mercury campaign. He also records how these parents have entered into the grip of a delusion (one he too now shares) and have adopted an outlook that is embattled and embittered and, in some cases, frankly paranoid. The result is a campaign that is increasingly harmful both to their families, and to the wider cause of families affected by autism.

In my experience, both members of the public and public authorities are generally sympathetic to the plight of parents of children with autism and other disabilities. Kirby's account of the tantrums and tirades of anti-mercury campaigners suggests that there is some danger that the public's good will is being abused and exploited as a license to behave badly. He reports the experience of the Wall Street Journal, which found itself confronted with a 'hornets' nest of moral intimidation' when it published a critical commentary on the anti-thimerosal campaign. Journalists received threats and harassment, and prominent supporters of childhood immunisation were 'targeted as baby-killers and compared to Hitler' (5).

The convergence, revealed in Kirby's book, between autism parent activists and anti-vaccine campaigners, is one of the great misfortunes of recent years. It will not benefit our children and, if it leads to the return of almost forgotten but still lethal infectious diseases, it may well harm the children of others.